

Project

Residential Development, Hacketstown, Skerries, Co Dublin

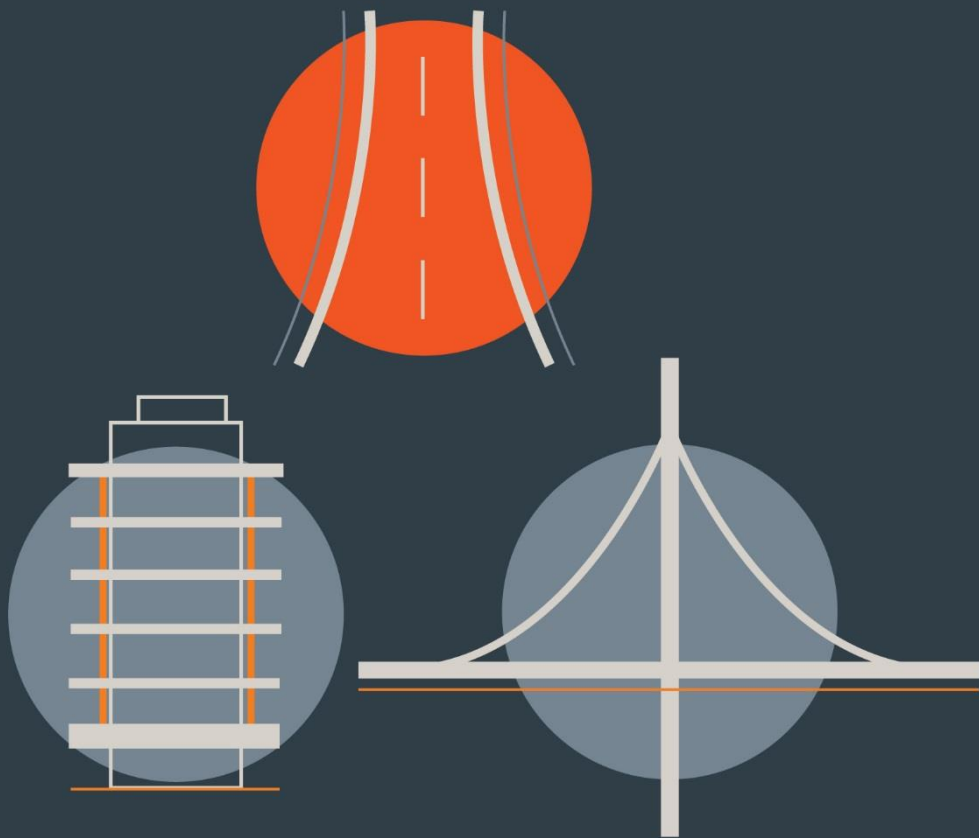
Report Title

DMURS Compliance Statement

Client

Land Development Agency

TRANSPORTATION



DBFL CONSULTING ENGINEERS

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Author: Ilyaas Adams

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Design Team
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DBFL Consulting Engineers

Dublin Office
Ormond House
Upper Ormond Quay
Dublin 7 D07 W704

Waterford Office
Suite 8b The Atrium,
Maritana Gate,
Canada Street,
Waterford X91 W028

Cork Office
14 South Mall
Cork T12 CT91

Tel 01 4004000
Email info@dbfl.ie
Web www.dbfl.ie

Tel 051 309500
Email info@dbfl.ie
Web www.dbfl.ie

Tel 021 2024538
Email info@dbfl.ie
Web www.dbfl.ie

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1.0 INTRODUCTION

1.1 OVERVIEW

1.1.1 DBFL Consulting Engineers (DBFL) have been commissioned by the Land Development Agency (LDA) to form part of a multidisciplinary design team who together have been appointed to investigate, analyse, and prepare the preliminary design (and associated SHD planning documentation) for a proposed residential development on a greenfield site located at Hacketstown, Skerries, Co. Dublin.

1.1.2 The principal members of the LDA appointed design team include;

- **John Spain Associates** (Planning Consultant).
- **O'Mahony Pike** (Architects).
- **Bernard Seymour** (Landscape Architects).
- **DBFL** (Consulting Civil, Structure and Transportation Engineers).
- **Linesight** (Quantity Surveyors).
- **Axis Engineering** (Services Consultant).
- **Seamus Monahan & Partners** (Project Managers)

1.1.3 The scheme proposals now being presented to the planning authority are the outcome of an integrated design approach that seeks to deliver a sustainable residential community connected by well-designed streets with assimilated open spaces which together deliver safe, secure, convenient, and attractive networks in addition to promoting a real and viable alternative to car-based journeys.

1.1.4 In response to the Hacketstown sites unique characteristics and associated accessibility characteristics it is the design teams view that the design presented for the proposed residential development has maximised every opportunity to ensure consistency with both the principles and design guidance outlined within the Design Manual for Urban Roads and Streets (DMURS) (Version 1.1, 2019).

1.1.5 This DMURS Compliance Report seeks to outline the specific design features that have been incorporated within the proposed residential scheme with the objective of delivering an integrated design that complies with the guidance outlined within DMURS.

1.1.6 This DMURS compliance report should be reviewed in conjunction with the architectural, landscape and engineering site layout drawings in addition to the following key planning documents all of which form part of the submitted planning application documentation;

- OMP Architects *Urban Design & Architectural Design Statement*
- BSLA Dwg No. 19620A-OMP-00-00M2-A-1000 entitled *Landscape Masterplan*

- DBFL Consulting Engineers `Traffic and Transport Assessment` Report
- DBFL Dwg 190170-DBFL-RD-SP-DR-C-1001 entitled *Road Levels and Layout Plan*
- DBFL Dwg 190170-DBFL-RD-SP-DR-C-1002 entitled *Road Markings & Signage Plan*
- DBFL Dwg 190170-DBFL-RD-SP-DR-C-1003 entitled *Road kerbing Layout Plan*
- DBFL Dwg 190170-DBFL-RD-SP-DR-C-1004 entitled *Road Vehicles Movement S1of2*
- DBFL Dwg 190170-DBFL-RD-SP-DR-C-1005 entitled *Road Vehicles Movement S1of2*
- DBFL Transportation Linkages Dwg 190009-DBFL-XX-XX-DR-C-1004 and 190009-DBFL-XX-XX-DR-C-1005 (as enclosed in Appendix B of this report)

1.2 PROPOSED DEVELOPMENT

- 1.2.1 The subject development lands are located within the southern part (6.68 hectares) of a larger zoned lands for development (16.6 hectares) which in turn is referred to as the Hacketstown Local Area Plan (LAP5.A) lands within the Fingal County Council (FCC) County Development Plan (2017-2023). These LAP5.A are located to the south of Skerries Town and immediately east of the main Dublin-Belfast rail corridor.
- 1.2.2 As illustrated in **Figure 1.1**, the entire Hacketstown lands incorporates two separate development plots namely (i) the Noonan Construction plot to the north and (ii) the subject Land Development Agency (LDA) plot to the south (8.2 hectares application area).
- 1.2.3 To date Phase 1 (103 houses) of the Hacketstown land's development (FCC Planning Ref F11A/0309/E1), as located on part of the northern Noonan Construction plot, has been completed / fully occupied and has subsequently been named Ballygossan Park. This existing development currently utilizes a newly constructed priority-controlled site access junction off Golf Links Road. As discussed later within this report a separate planning application is being advanced for the remaining portion of the northern Noonan Construction plot.
- 1.2.4 This DMURS statement has been compiled in support of the planning application which is being made by the LDA for the development of the Hacketstown lands southern plot. The LDA proposals incorporates a total of 345 no. units comprising:
- 152 no. Apartments
 - 154 no. Duplex
 - 39 no. Houses.

1.2.5 In addition to accommodating permeable pedestrian, bicycle, and vehicle connections with the northern plot the LDA scheme proposals will also benefit from the provision of a new 'second' site access junction on Golf Links Road which is to be located to the south of the southern plot. A continuous vehicle link will meander through the proposed developments southern plot and connect with the northern plots street network thereby fully integrating the both the Hacketstown's southern and northern development plots and subsequently delivering two access junctions between the two development plots and the Golf Link Road corridor.



Figure 1.1: Hacketstown LDP5.A Zoned Lands - Indicative LDA Development Plot

1.3 STRUCTURE OF REPORT

1.3.1 The key design principles and overriding objectives of DMURS are introduced in **Chapter 2. A** summary of DMURS principal design features and how they have shaped the design of the proposed development are presented in **Chapter 3** subsequently

demonstrating the level of compliance between the scheme proposals and DMURS guidance.

2.0 DMURS OBJECTIVES

2.1 OVERVIEW

2.1.1 DMURS seeks to balance the needs of all users, creating well-designed streets at the heart of sustainable communities. It states that:

"Well designed streets can create connected physical, social and transport networks that promote real alternatives to car journeys, namely walking, cycling or public transport"

2.1.2 DMURS also seeks to create streets which are attractive places and encourage designs appropriate to context, character and location that can be used safely and enjoyably by the public. The recommended approach includes the adoption of a more integrated model of street design, where barriers (physical and perceived) are removed to promote more equitable interaction between users in a safe and traffic calmed urban environment

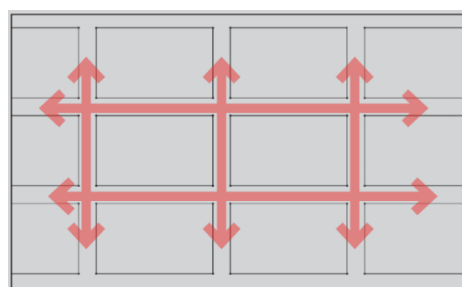
2.1.3 This integrated approach incorporates elements of urban design and landscaping that contribute to positively influence behaviour thereby reducing the necessity for conventional measures (e.g. physical barriers and road geometry) along to manage travel behaviour. The recommended approach creates environments where:

- Street Networks are similar in structure (more eligible) with higher levels of connectivity (more permeability) thus reducing travel distances.
- Higher quality street environments attract pedestrians and cyclists, promoting the use of sustainable modes of transport.
- Self-regulating streets proactively manage vehicle driver behaviour and calm traffic, promoting safer streets.
- Street and junctions are more compact, providing better value for money.

2.2 PLACEMAKING

2.2.1 DMURS recommends that whilst the movement of traffic is still a key issue, there are several others, including the 'sense of place', which are of core significance to the creation of safe and more integrated street designs. DMURS reveals that place can be difficult to define but can be measured and relate to;

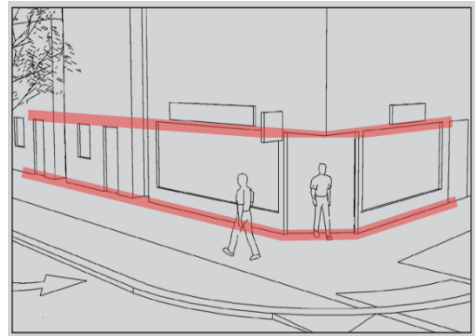
CONNECTIVITY : The creation of a vibrant and active places requires pedestrian activity. This in turn requires walkable street networks that can be easily navigated and are well connected.



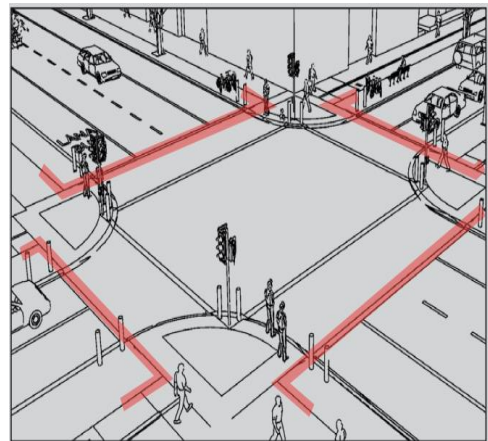
ENCLOSURE : A sense of enclosure spatially defines streets and creates a more intimate and supervised environment. A sense of enclosure is achieved by orientating buildings toward the street and placing them along its edge. The use of street trees can also enhance the feeling of enclosure.



ACTIVE EDGE : An active frontage enlivens the edge of the street creating a more interesting and engaging environment. An active frontage is achieved with frequent entrances and openings that ensure the street is overlooked and generate pedestrian activity as people come and go from buildings.

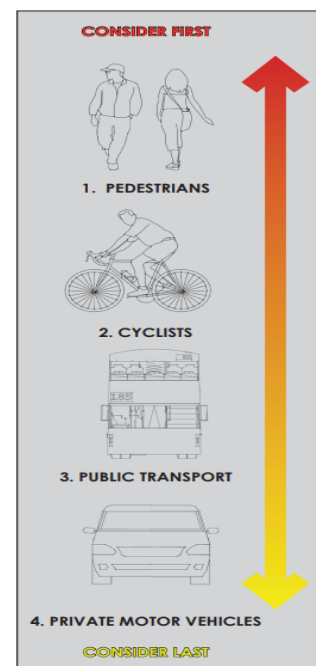


PEDESTRAIN ACTIVITY / FACILITIES: The sense of intimacy, interest and overlooking that is created by a street that is enclosed and lined with active frontages enhances a pedestrian's feeling of security and well-being. Good pedestrian facilities (such as wide footpaths and well designed crossings) also make walking a more convenient and pleasurable experience that will further encourage pedestrian activity.



2.3 THE DMURS USER HIERARCHY

2.3.1 DMURS set out a clear user hierarchy for scheme designers which prioritises sustainable forms of transport. Walking is the most sustainable form of transport with all journeys beginning / ending on foot. By prioritising design for pedestrians, the number of short journeys taken by car can be reduced, public transport made more accessible and the delivery of walkable communities addresses issues of social equity. DMURS reveals that cyclists must be afforded a high priority as trips by bicycle have the potential to replace motor vehicles as an alternative means of transport for short to medium range trips.



2.3.2 The movement of buses should be prioritised over other motorised vehicles according to DMURS whilst the placement of private motor vehicles at the bottom of the user hierarchy is not anti-car but acknowledges that a balanced solution is required with the needs of the car no longer taking priority over (i) the needs of other users or (ii) the value of place within the proposed residential development and across the local receiving environment.

2.3.3 As outlined in Chapter 3 the design team have adhered closely to this hierarchy, by assigning higher priority to the movement of pedestrians and cyclists within the development and implementing self-regulating streets which actively manage vehicle movements within a low speed, high-quality residential environment.

2.4 DMURS DESIGN PRINCIPLES

2.4.1 At the heart of DMURS is a place-based, integrated approach to road and street design with the following four overarching design principals to be applied to the design of all urban roads and streets.

- ***Design Principle 1:*** To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and in particular more sustainable forms of transport
- ***Design Principle 2:*** The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment
- ***Design Principle 3:*** The quality of the street is measured by the quality of the pedestrian environment
- ***Design Principle 4:*** Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design

2.4.2 Compliance of the proposed development with the design principles of DMURS is described in the following chapter, with details of how these will be implemented through adherence to recommendations in relation to individual design elements.

3.0 DMURS DESIGN ATTRIBUTES

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
<p>Movement Function</p>	<p>DMURS encourages designers to consider the movement function of a street / street network and develop a street hierarchy reflective of the levels of connectivity required and volumes of traffic</p>	<p>The proposed developments street hierarchy is illustrated in Appendix A. With the external Golf Links Road corridor exhibiting LINK street functions the proposed internal network incorporates a structured hierarchy of integrated residential streets responding to their context and function attributes;</p> <ul style="list-style-type: none"> • Type 1 : Primary LOCAL Street (The Avenue) – 30kph design speed. • Type 2 : Secondary LOCAL Street – 20kph design speed. • Type 3 : Residential Courtyards – 20kph design speed. • Type 4 : Pedestrian / Cycle Only Urban Street • Type 5 : Greenway (Shared pedestrian / cycle facility) <p>Meandering north-south through the LDA lands the Primary LOCAL Street (The Avenue) connects to the north (via the existing LAP lands Phase 1 development Ballygossan Pk) with Gold Links Road. To the south the Primary LOCAL Street continues through the proposed development before reconnecting with Gold Links Road corridor. Providing valuable permeability for all modes of travel (including a high quality segregated two-way cycle track) the alignment of The Avenue has been purposively design (30kph) to actively manage vehicle speeds and discourage through traffic.</p> <p>The secondary LOCAL streets (20kph) have been designed to have relatively very short lengths of straight sections with tight corner and junction geometry further contributing to managing vehicle speeds. The main function of these secondary LOCAL streets being to provide access within/across the immediate development quarter each of which exhibit varying distinctive characters. The residential courtyards (20kph) will be enclosed lightly trafficked squares with onwards permeability provided for only pedestrians and cyclists. Within the courtyards higher quality material specifications will be applied to influence its place function.</p>
<p>Place Function</p>	<p>The '<i>Place Function</i>' essentially distinguishes a street from a road, achieved largely by creating a relationship between the street and the buildings and spaces that frame it, ultimately resulting in a richer and more fulfilling environment</p>	<p>The adopted design philosophy has sought to achieve a quality '<i>sense of place</i>' by incorporating several green open space areas to encourage social activity. Furthermore, the type of surface materials, landscaping and street furniture have been chosen with consideration of both their aesthetic qualities and context of the existing surrounding environment. The design has also sought to minimise the impact of highway features by avoiding excessive signing, road markings and street furniture. Significant levels of enclosure along each street type as achieved by the building orientation and tree planting contribute to providing a more intimate and supervised street environment.</p>

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Street Layout	DMURS looks to encourage street layouts where <i>“all streets lead to other streets, limiting the number of cul-de-sacs that provide no through access”</i> and maximise the number of walkable / cyclable routes between destinations	The street layout has been influenced by several factors including the Hacketstown LAP 2014–2019, boundary conditions, future and existing development, watercourses and hedgerows. The resulting street pattern is largely a grid pattern with some minor curvilinear sections, creating attractive legible streetscapes. The Avenue runs north-south through the site in a loop to / from Golf Links Road with the use of vehicle cul-de-sacs limited but with through access maintained for walking and cycling throughout, thereby maximising connections within the site and complying with DMURS principles.
Block Sizes	DMURS states that block dimensions of 60-80m are optimal for pedestrian movement in Centres, whilst block dimensions of up to 100m enable reasonable levels of pedestrian permeability in Neighbourhoods / Suburbs. Block dimensions should not exceed 120m	The blocks sizes within the proposed development (varying from 65m up to 85m maximum) are optimised in line with density and comply with the requirements of DMURS
Wayfinding	DMURS states that in general <i>“the more the orthogonal street layout the more legible it will be (as well as being the most connected)”</i>	The grid and curvilinear street pattern adopted for the proposed development is recognised by DMURS as being generally legible in terms of wayfinding.
Permeability	Permeability can be categorised into four types: <ul style="list-style-type: none"> • Dendritic Networks • Open Networks • 3 Way Off-Set Networks • Filtered Permeability 	The development strategy adopts an open network model with elements of a filtered permeability network, maximising connectivity between key local destinations through the provision of a high degree of permeability and legibility for sustainable forms of travel.
Approach to Speed	DMURS states that designers should balance speed management, the values of place and reasonable expectations of appropriate speed according to Context and Function. Where vehicle movement priorities are low, such as on Local Streets, lower speeds limits should be applied.	The proposed development has adopted the following approach to vehicle speed, with streets designed to ensure they are self-regulating through a combination of ‘soft’ (landscaping and active edges) and ‘hard’ measures (street geometry, raised tables and build outs). <ul style="list-style-type: none"> • Golf Links Road – LINK Street (50kph) at both site access junctions • Primary LOCAL Street (The Avenue) – 30kph design speed. • Secondary LOCAL Street – 20kph design speed. • Residential Courtyards – 20kph design speed.

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Street Trees, Planting & Street Furniture	DMURS primarily considers street trees in terms of enclosure and suggests that for ratios of building height and street width within this development that supplementary street trees are desirable	A comprehensive landscape masterplan for the proposed development has been prepared by Landscape Architects. The masterplan reinforces a sense of street enclosure through the addition of street trees with appropriate canopy spreads best suited to Local Streets for optimal compliance with DMURS.
Active Street Edges	Designers should aim for active street edges which provide passive surveillance and promote pedestrian activity	On-street activity is promoted within the internal layout of all internal Local Streets and Pedestrian / Cycle Only Urban Streets through the adoption of 'own-door' dwellings and corner plots have been designed with dual aspect units.
Signage & Line Marking	DMURS notes that designers should use discretion with regard to the self-regulating characteristics of streets and the impact of signs / line marking on the value of place	In recognition of the low speed nature and higher place function of Local Streets , the proposed design has sought to specify minimal signage and line markings along the internal local streets with such treatments used sensitively throughout.
Materials & Finishes	DMURS states that designers should use <i>'contrasting materials and textures to inform pedestrians of changes to the function of space (i.e. to demarcate verges, footway, strips, cycle paths and driveways) and in particular to guide the visually impaired'</i>	The range of proposed materials is in line with the requirements of DMURS with Primary and Secondary Local Streets (e.g. leading to/from the site access nodes with the Link Street) will be formed using standard macadam / asphalt finishes. At each of the at-grade flat top pedestrian crossing / traffic calming table treatments, different surface material treatments are proposed to alert and subsequently influence driver behaviour and vehicle speeds. Courtyard areas will be distinguished through the application of high quality material specification in addition to different coloured surfacing materials.
Footways	DMURS notes that well designed footpaths are free of obstacles and wide enough to allow pedestrians to pass each other in comfort.	Clear, unobstructed footpaths of no less than 2.0m wide are provided throughout the scheme, with connections and tie-ins to existing external pedestrian networks thereby complying with DMURS requirements. Greenways (shared ped / cycle connections) have been designed to incorporate 3.0m wide facilities as per the guidance outlined in the National Cycle Manual which accompany DMURS
Pedestrian Crossings	DMURS considers crossings to be <i>"one of the most important aspects of street design as it is at this location that most interactions between pedestrians, cyclists and motor vehicles occur"</i> .	Well-designed pedestrian crossing facilities are provided at frequent intervals along key travel desire lines throughout the scheme in addition to those located at street nodes. All courtesy crossings are provided with either dropped kerbs or a raised flat top treatment thereby allowing pedestrians to informally assert a degree of priority. All informal pedestrian crossing facilities are at least 2.0-2.4m wide, whilst all controlled pedestrian crossings are at least 2.4m wide and all toucan crossings are 4.0m wide or more.

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Corner Radii	Reducing corner radii improves pedestrian and cyclist safety at junctions by lowering vehicle speeds and increasing inter-visibility between users	<p>With the objective of encouraging low vehicle speeds and maximising pedestrian safety and convenience, corner radii have been provided as per DMURS guidance, at:</p> <ul style="list-style-type: none"> • Link / Local nodes has been specified as 5.0m - 6.0m where required as informed by swept path analysis, and • Local / Local nodes has been specified as 3.0m
Pedestrian & Shared Surfaces	In the context of the proposed development, DMURS recognises the use of shared surfaces as being highly desirable where <i>"movement priorities are low and there is a high place value in promoting more liveable streets (i.e. homezones) such as on local streets within neighbourhood"</i>	A small number of Courtyards are proposed within the development and have been designed to incorporate features that ensure drivers recognise that they must proceed with caution within a low speed environment and that they are likely to be sharing the space with non-motorised users. This has been achieved by applying differing materials and finishes within the design philosophy of residential Homezones.
Cycling Facilities	DMURS references the National Cycle Manual (NCM) in terms of the provision of appropriate cycling facilities.	Segregated two-way cycle track facilities are provided along the entire length of the Primary LOCAL Street (the Avenue). The design of this high quality segregated bicycle track ensure that a 2.5m wide dedicated track is delivered in accordance with the guidance outlined within the NCM.
Carriageway Width	DMURS states that LINK Streets should lie in the range of 5.5m to 7m, while on Local Streets carriageway widths should be between 5.0m-5.5m and on local streets where a shared surface is provided should not exceed 4.8m	<p>The proposed residential developments internal street network are considered to be compliant with DMURS, incorporating the following carriageway width characteristics:</p> <ul style="list-style-type: none"> • Type 1 : Primary LOCAL Street (The Avenue) – A width of 6.0m has been provided which is noted as being slightly wider to the DMURS requirement of 5.5m. The extra width has been provided in response to a requested received during preplanning discussions with the local authority who expressed a wish that the opportunity in the future to operate a public bus route along The Avenue is retained. The minimum recommended width for a bus route is 6.0m. Furthermore, the initial as built section of 'The Avenue' (through Ballygossan Park) has been constructed at 6.0m wide. Accordingly, the proposals with a 6.0m wide carriageway retains the ability for a future bus route and is also consistent with the existing as built 'Avenue' to the north of the LDA lands with which it connects with. • Type 2 : Secondary LOCAL Street – 5.5m wide carriageway. • Type 3 : Residential Courtyards – 5.5m wide carriageway.

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Carriageway Surfaces	Where low design speeds are desirable (i.e. 30km/h) DMURS states that changes in colour and/or texture of the carriageway should be used periodically such as at crossings or where shared carriageways are proposed (i.e. 10-20km/h) applied to the full length of the street	Raised traffic calming features (e.g., flat top junction treatments), pedestrian crossings and shared surfaces such as Homezone area will be differentiated through the application of differing coloured surfacing on the carriageways.
Junction Design	DMURS notes that junction design has traditionally being determined by traffic volumes however it recommends that designers should now take a more balanced approach to junction design catering for all road users specific requirements	All junctions within the proposed development will be priority controlled which is consistent with the proposed traffic flows and complies with the requirement of DMURS for junctions between Local Streets and between Local / Link Streets.
Forward Visibility & Visibility Splays	DMURS provides SSD Standards in relation to forward visibility requirements at junctions to ensure drivers have sufficient reaction time	Appropriate clear unobstructed visibility splays on both the horizontal and vertical planes, as per DMURS requirements; are provided / safeguarded at all internal nodes and at the site access junctions to the external road network in response to the adopted design speeds.
Horizontal & Vertical Deflections	DMURS highlights that traffic calming features should be provided on longer straights where there is more than 70m between junctions	Vertical deflections in the form of raised tables have been strategically placed across the internal Local Street network to promote lower design speeds and enable pedestrians to cross the street at-grade. Raised tables / platforms have been located at Local / Link nodes, including raised zebra crossings on all arms of the proposed roundabout. The maximum height of these raised flat top treatments is designed to be 75mm with a minimum flat top width of 2.0m. Junction layout designs (e.g. change of priority), kerb buildouts and speed reduction bends have also been incorporated into the Local Streets as traffic calming features making the local streets self-regulating.
Kerbs	DMURS provides indicative kerbs heights of 125mm on Link Streets for clear segregation, while lower kerb heights of 60mm are appropriate pedestrian activity is higher & design speeds lower i.e. Local Streets and no kerb should be provided for shared surface	Internally within the development carriageway kerb heights will comply with DMURS requirements having been specified as follows: <ul style="list-style-type: none"> • Link Street: 125mm, • Primary / Secondary Local Streets: 60mm

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
On-Street Parking	Well designed on-street parking can help calm traffic, although a balance needs to be struck as an over provision will conflict with sustainability objectives and be visually dominant.	In accordance with DMURS, parking provided through a mix of in curtilage perpendicular spaces measuring 5m x 2.5m, off street car park areas and parallel spaces measuring 6m x 2.2m. The provision of on-street car parking includes both parallel and perpendicular parking bays along either one or both sides of the internal local streets. Nevertheless, the potential visual dominance of on-street car parking is minimised through the provision of landscaped buffers and street trees strategically spaces as the intervals recommended by DMURS.
Multi-disciplinary Design Team	DMURS advocates multi-disciplinary input into the development of a scheme to ensure a holistic design approach is implemented	In accordance with design philosophy of DMURS, the proposed development has been prepared by a multi-disciplinary design team including OMP (architects), DBFL Consulting Engineers (civil engineers & transport planning), BSLA (landscape architects) and Axis Consulting (Street Lighting).
Road Safety Audit (RSA)	RSAs are required to identify potential hazards and how they could affect road users. They should be undertaken in full cognisance of the principles, approaches and standards contained within DMURS	RSAs will be considered for all stages of the development to ensure adequate and appropriate measures are included guaranteeing satisfactory standards of personal and traffic safety

APPENDIX A

Proposed Street Hierarchy, Connectivity and Permeability

Linkage Type 1 – Streets with generally 6.0m wide carriageways, on-street car parking, parallel dedicated cycle track facilities and footpaths.

Linkage Type 2 – Streets generally 5.5m wide carriageways, on-street car parking and adjoining footpaths.

Linkage Type 3 – Parking Courtyards with dedicated footpaths

Linkage Type 4 – Streets / public realm areas with only pedestrian access permitted access.

Linkage Type 5– Shared pedestrian / bicycle connection

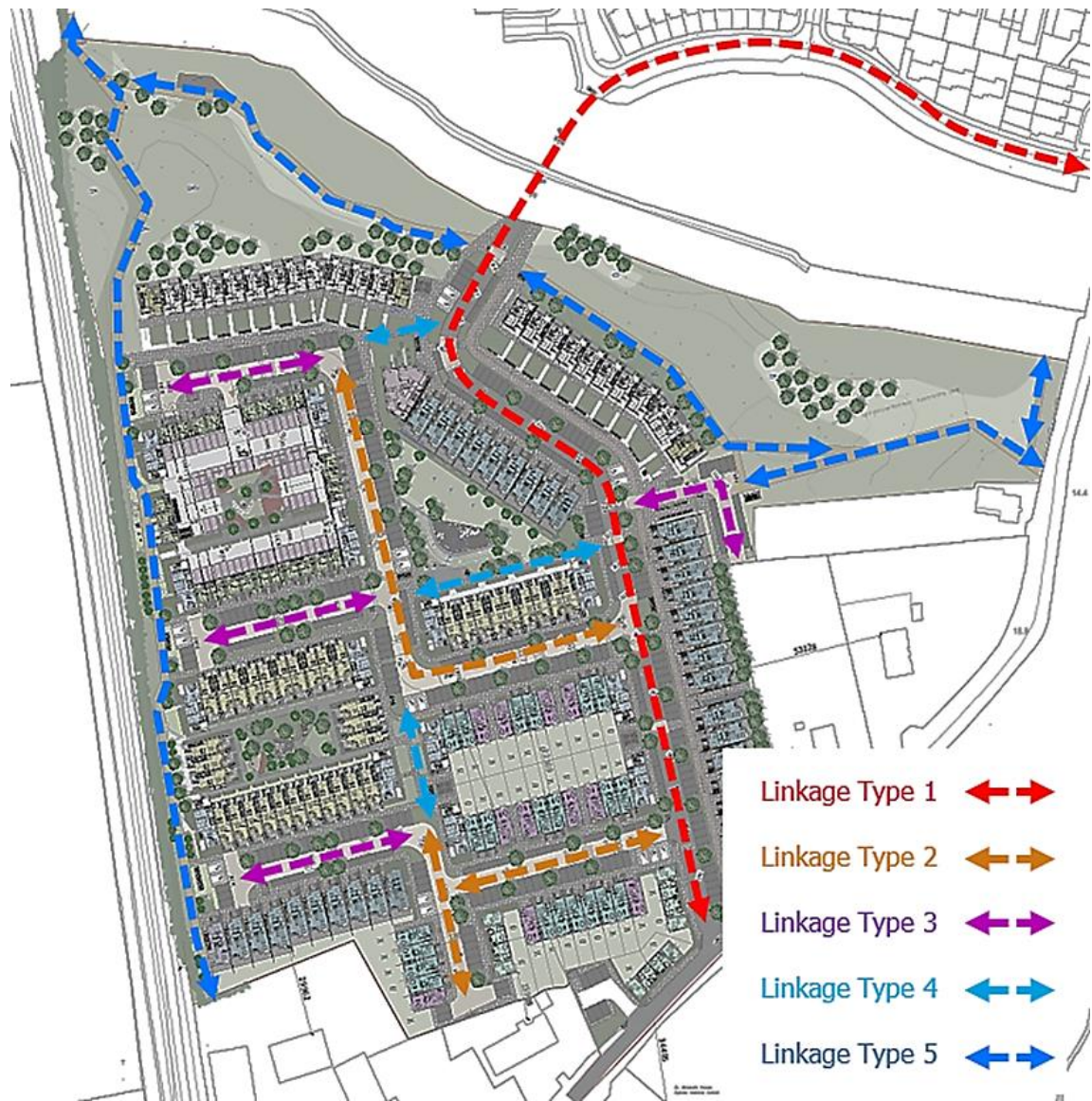


Figure A1: Internal Street Network by Linkage Type

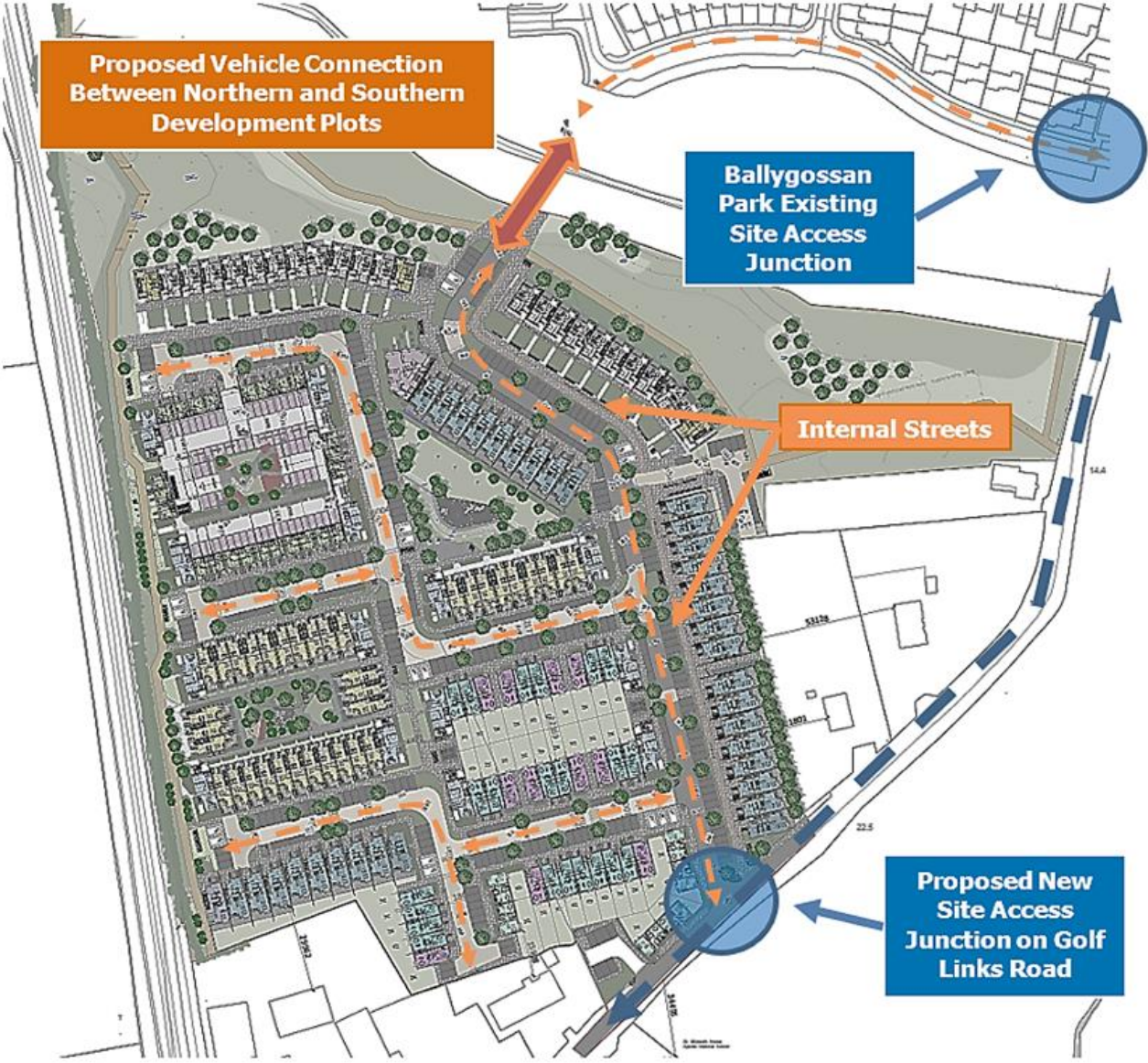
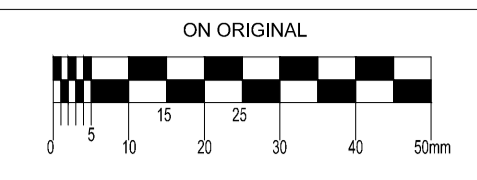


Figure A2: Proposed LDA Site Access Locations and Internal Streets

APPENDIX B

Linkages Drawings



- NOTES:
- GENERAL NOTES:
1. ALL CO-ORDINATES ARE TO IRISH TRANSVERSE MERCATOR (BASED ON OS MAPPING)
 2. ALL LEVELS ARE TO ORDNANCE DATUM MALIN HEAD (BASED ON LIDAR SURVEY INFORMATION)
 3. ALL DIMENSIONS IN METERS UNLESS SPECIFIED OTHERWISE
 4. DO NOT SCALE FROM DRAWING

- LEGEND:
- ISOCHRONE: 500m, 1000m WALKING CATCHMENT
 - 🚏 INTERCHANGE FACILITIES (MULTIPLE ROUTES)
 - 🚊 RAIL INTERCHANGE FACILITIES (MULTIPLE ROUTES)
 - WALKING ROUTE TO/FROM NEAREST BUS INTERCHANGE
 - WALKING ROUTE TO/FROM SKERRIES RAIL STATION
 - HEAVY RAIL NETWORK

- DUBLIN BUS
- 3.3E SKERRIES - LWR. ABBEY ST
 - 3.3N WESTMORELAND ST - BALBRIGGAN
 - 3.3X SKERRIES - CUSTOM HOUSE QUAY
- SWORDS EXPRESS
- 5.5X UCD - SKERRIES
- GO AHEAD
- 3.3 BALBRIGGAN - LWR. ABBEY ST
 - 3.3A SKERRIES - DUBLIN AIRPORT
- FINGAL EXPRESS
- UCD - SKERRIES



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DUBLIN OFFICE: Ormond House, Upper Ormond Quay, Dublin 7, D07 W704
PHONE: +353 1 450 6000

CORK OFFICE: Phoenix House, Monahan Road, Cork, T12 H1KX
PHONE: +353 (0) 21 2204330

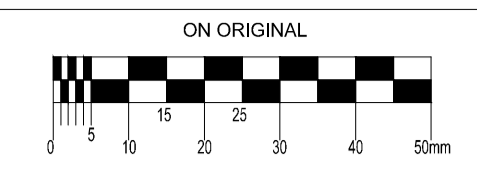
WATERFORD OFFICE: Suite 10 The Acton, Marlara Gate, Canada Street, Waterford, X91 W028
PHONE: +353 51 309 500

project ref.
JUNCTION UPGRADE WORKS AT
HACKETTSTOWN - SKERRIES

drawing title
EXISTING PUBLIC TRANSPORTATION
LINKAGES

client
LAND DEVELOPMENT AGENCY

designed by	author	scale	sheet size
MJK	JP	NTS	A1
drawing no.			revision
190170-DBFL-TR-SP-DR-C-1004			P01



- NOTES:
- GENERAL NOTES:
1. ALL CO-ORDINATES ARE TO IRISH TRANSVERSE MERCATOR (BASED ON OS MAPPING)
 2. ALL LEVELS ARE TO ORDANCE DATUM MALIN HEAD (BASED ON LIDAR SURVEY INFORMATION)
 3. ALL DIMENSIONS IN METERS UNLESS SPECIFIED OTHERWISE
 4. DO NOT SCALE FROM DRAWING

- LEGEND:
- ISOCHRONE: 500m, 1000m WALKING CATCHMENT
 - 🚌 INTERCHANGE FACILITIES (MULTIPLE ROUTES)
 - 🚂 RAIL INTERCHANGE FACILITIES (MULTIPLE ROUTES)
 - WALKING ROUTE TO/FROM NEAREST BUS INTERCHANGE
 - WALKING ROUTE TO/FROM SKERRIES RAIL STATION
 - HEAVY RAIL NETWORK

- DRAWING NOTES:
- BUS CONNECTS
- LOCAL ROUTES
- L55 BALLBRIGGAN - DUBLIN AIRPORT
 - X76 SKERRIES - UCD
- PEAK TIME ROUTES
- X76 SKERRIES - UCD



ORDNANCE SURVEY IRELAND LICENCE
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GOVERNMENT OF IRELAND

P01	01-04-22	Issued For Planning	JP	TJ
rev	date	description	by	chkd.
		A - Approved		
		B - Approved with comments		
		C - Do not use		

S2 - INFORMATION PLANNING

DBFL Consulting Engineers
Civil, Structural & Transportation Engineering
www.dbfl.ie

DUBLIN OFFICE: Ormond House, Upper Ormond Quay, Dublin 7, D07 W704
PHONE: +353 1 400 6000

CORK OFFICE: Phoenix House, Monahan Road, Cork, T12 H1KX
PHONE: +353 (0) 21 220 6338

WATERFORD OFFICE: Suite 10 The Acton, Marlara Gate, Canara Street, Waterford, X91 W028
PHONE: +353 51 309 500

project ref.
JUNCTION UPGRADE WORKS AT HACKETTSTOWN - SKERRIES

drawing title
PROPOSED PUBLIC TRANSPORTATION LINKAGES

client
LAND DEVELOPMENT AGENCY

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